REMARKS

Claims 1-8 are pending in this application. Claims 1-8 are rejected. Claim 1 has been amended herein. Applicants submit that the amendment is supported by the specification at page 6, line 25 to page 7, line 4. Attached hereto is a marked-up version of the changes made by the current amendment, captioned "Version with Markings to Show Changes Made."

In paragraph 1 of attachment to the Advisory Action dated November 26, 2002, the Examiner states that graft copolymers derived from diene-containing backbone polymers are not excluded from the claims, since "conjugated diene" and "crosslinking monomer" as used in Bertelo et al. qualify as "polyfunctional monomer" as recited in the present claim. In response thereto, Applicants amend claim 1 to limit the "polyfunctional monomer" to specific monomers in order to exclude the conjugated diene, namely to exclude graft copolymers derived from diene-containing backbone polymers.

In view of paragraph 3 of the attachment to the Advisory Action, the phrase "when they are used" has been deleted from claim 1.

In paragraph 2 of the attachment of the Advisory Action, The Examiner states that Applicants' calculation, 0.6/0.1=6, is based on the erroneous notion that viscosity and concentration are linearly related.

However, as shown in the enclosed copy of "Handbook of Plastics Test Methods", Chapter 4, page 63, it is generally approved that the reduced viscosity is defined by η_{sp}/c, wherein η_{sp} is

specific viscosity and c is concentration. Based on this reference, Applicants respectfully traverse the Examiner's argument.

In paragraph 2 of the attachment of the Advisory Action, the Examiner also states that the example provided in the declaration is not representative of the graft copolymer of Aoyama et al.

In order to compare the reduced viscosity values η_{sp}/c measured in the concentrations of 0.1 g/dl and 0.2 g/dl, the previous submitted Declaration was filed.

Applicants note that in the present invention, η_{sp}/c (0.2 g/dl) = 1 to 5, while in Aoyama et al., η_{sp}/c (0.1 g/dl) = 6 or more

In the Declaration, a graft copolymer composed of 40% by weight of methyl methacrylate, 10% by weight of butyl acrylate and 50% by weight of a crosslinked polybutyl acrylate was tested. The Declaration shows that the reduced viscosity values of the MEK-soluble portion of the graft copolymer are 6.3 (measuring concentration 0.2 g/dl) and 4.9 (measuring concentration 0.1 g/dl). These results show that the MEK-soluble portion having a reduced viscosity of 1 to 5 measured at 30°C with respect to 0.2 g/dl acetone solution has a reduced viscosity of less than 4.9, in other words, **less than the range** disclosed in Aoyama et al., when measured at 30°C with respect to 0.1 g/dl acetone solution.

Aoyama et al. discloses that graft copolymers are prepared from 15 to 50 parts by weight of a monomer component composed of 30 to 100% by weight of a rubber-like polymer (crosslinked alkyl acrylate polymer) composed of 80 to 100% by weight of an alkyl acrylate, 0 to 20% by weight of other monomers and a crosslinking agent (column 2, lines 24-49).

Aoyama et al. discloses that one of typical examples of the alkyl acrylate used for the rubber-like polymer (crosslinked alkyl acrylate polymer) is n-butyl acrylate (column 3, lines 53-61), and a crosslinked polybutyl acrylate are used in the working examples. The content 50% by weight of a crosslinked polybutyl acrylate in the graft copolymer used in the declaration is within the range taught by Aoyama et al.

The crosslinked polybutyl acrylate in the graft copolymer is not extracted with MEK. The MEK-soluble portion, the reduced viscosity of which is measured, of a graft copolymer is a free polymer (linear polymer) which is produced during the graft polymerization, but does not chemically bond to the crosslinked polybutyl acrylate. Therefore, Applicants submit that the reduced viscosity values can be properly compared with respect to different measuring concentrations regardless of the content of the crosslinked polybutyl acrylate in the graft copolymer.

With respect to the graft component, Aoyama et al. discloses that the graft component is composed of 30 to 100% by weight of methyl methacrylate and 70 to 0% by weight of other monomers (column 2, lines 52-59), and one of preferable monomers to be copolymerized with methyl methacrylate is n-butylacrylate (column 5, lines 13-17 and lines 32-40). Further, the graft component (MMA 80% by weight, BA 20% by weight) in the tested graft copolymer is similar t the graft component (MMA 84% by weight, BA 16% by weight) used in Example 6 of Aoyama et al. (see Table 1).

In light of the above, Applicants respectfully submit that the graft copolymer used in the Declaration is representative of the graft copolymer of Aoyama et al.

Aoyama et al. teaches using a graft copolymer, the MEK-soluble portion of which has a specific viscosity η_{sp} of at least 0.6 (at 0.1 g/dl), in other words, a reduced viscosity η_{sp}/c of at least 6 (at 0.1 g/dl) which is much higher than a reduced viscosity of 5 measured at 0.2 g/dl. Teachings of Aoyama et al. cannot lead a person skilled in the art to use a graft copolymer, the MEK-soluble portion of which has a reduced viscosity η_{sp}/c of 5 or less measured at 0.2 g/dl. Even if the graft copolymer of Aoyama et al. is used in the composition of Heichele et al., the thus-modified vinyl chloride composition is still different from the presently claimed composition.

For at least the above reasons, Applicants submit that the present invention, as amended, is in condition for allowance. Applicants earnestly request withdrawal of the rejections and passage of the claims to issue.

In the event that any fees are due in connection with this paper, please charge Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosures: Version with Markings to Show Changes Made
Copy of *Handbook of Plastics Test Methods*

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend claim 1 as follows:

1. (Three times amended) A vinyl chloride resin composition having excellent weatherability and impact resistance which comprises:

(A) 100 parts by weight of a vinyl chloride resin,

(B) 1 to 10 parts by weight of a graft copolymer which is obtained by polymerizing 25 to 75 parts by weight of a crosslinked elastomeric polymer so that the total thereof is 100 parts by weight, and the methyl ethyl ketone-soluble portion of which has a reduced viscosity η_{sp}/c, wherein η_{sp} is specific viscosity and c is concentration of polymer in solvent in g/100 mL, of to 5 measured at 30°C with respect to its 0.2 g/100 cc acetone solution,

said graft monomer component being composed of 40 to 100% by weight of methyl methacrylate and 0 to 60% by weight of at least one monomer selected from the group consisting of an alkyl acrylate having a C_1 to C_8 alkyl group, an alkyl methacrylate having a C_2 to C_6 alkyl group, an unsaturated nitrile and an aromatic vinyl compound, and said crosslinked elastomeric polymer being composed of 79.9 to 99.99 % by weight of an alkyl acrylate having a C_2 to C_8 alkyl group, 0.01 to 5% by weight of a polyfunctional monomer and 0 to 20% by weight of other monomers copolymerizable therewith,

said polyfunctional monomer being selected from the group consisting of an aromatic polyfunctional vinyl compound, a dimethacrylic acid ester of a polyhydric alcohol, an allyl ester of an unsaturated carboxylic acid, a diallyl compound and a triallyl compound, and said other monomers being selected from the group consisting of monomers having a single vinyl group and organosiloxanes ~~when they are used~~, and

(c) 10 to 30 parts by weight of calcium carbonate.